

## **EXECUTIVE SUMMARY**

Bison Engineering, Inc. performed compliance emissions testing for ASARCO, LLC – Hayden Operations on their Acid Plant, Anode Baghouse, Secondary Hood Baghouse, Tertiary Ventilation System, and Vent Gas Baghouse stacks at their facility in Hayden, Arizona. The following table summarizes the averaged results of the test runs during this test project.

**Table 1: Executive Summary of PM Testing**

<b>SOURCE</b>	<b>PARAMETER</b>	<b>LIMIT</b>	<b>UNITS</b>	<b>RESULTS</b>	<b>PASS/FAIL</b>
Acid Plant	Non-sulfuric acid PM	6.2	mg/dscm	3.12	PASS
Vent Gas Baghouse	Filterable PM	23	mg/dscm	6.46	PASS
Tertiary Ventilation System	Filterable PM	23	mg/dscm	7.48	PASS
Anode Baghouse	Filterable PM	23	mg/dscm	3.01	PASS
Secondary Hood Baghouse	Filterable PM	23	mg/dscm	3.27	PASS

**Table 2: Summary of Vent Gas Baghouse PM**

<b>ASARCO, LLC – HAYDEN OPERATIONS VENT GAS BAGHOUSE</b>						
	<b>Units</b>	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>AVG</b>	<b>Limit</b>
Date		09/05/18	09/05/18	09/06/18		
Time		11:43- 14:08	15:02- 17:56	06:37- 10:23		
Test Duration	minutes	120	120	120	<b>120</b>	
PM	mg/dscm	8.24	4.92	6.23	<b>6.46</b>	<b>23</b>

**Table 3: Summary of Tertiary Hooding PM**

<b>ASARCO, LLC – HAYDEN OPERATIONS TERTIARY HOODING</b>						
	<b>Units</b>	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>AVG</b>	<b>Limit</b>
Date		09/07/18	09/10/18	09/10/18		
Time		12:53- 15:14	07:49- 09:51	13:19- 15:19		
Test Duration	minutes	120	120	120	<b>120</b>	
PM	mg/dscm	8.82	7.50	6.13	<b>7.48</b>	<b>23</b>

**Table 4: Summary of Anode Baghouse PM**

<b>ASARCO, LLC – HAYDEN OPERATIONS ANODE BAGHOUSE</b>						
	<b>Units</b>	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>AVG</b>	<b>Limit</b>
Date		09/12/18	09/12/18	09/13/18		
Time		14:07- 16:48	17:46- 19:53	07:26- 10:01		
Test Duration	minutes	120	120	120	<b>120</b>	
PM	mg/dscm	3.30	4.22	1.52	<b>3.01</b>	<b>23</b>

**Table 5: Summary of Secondary Hood Baghouse PM**

<b>ASARCO, LLC – HAYDEN OPERATIONS SECONDARY HOOD BAGHOUSE</b>						
	<b>Units</b>	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>AVG</b>	<b>Limit</b>
Date		09/13/18	09/14/18	09/14/18		
Time		13:14- 15:29	09:06- 11:13	11:45- 13:56		
Test Duration	minutes	120	120	120	<b>120</b>	
PM	mg/dscm	4.78	2.75	2.27	<b>3.27</b>	<b>23</b>

**Table 6: Summary of Acid Plant PM**

<b>ASSARCO, LLC – HAYDEN OPERATIONS ACID PLANT</b>						
	<b>Units</b>	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>AVG</b>	<b>Limit</b>
Date		09/18/18	09/19/18	09/21/18		
Time		09:55- 16:26	11:12- 15:18	09:19- 13:22		
Test Duration	minutes	240	240	240	<b>240</b>	
PM	mg/dscm	4.18	4.17	1.02	<b>3.12</b>	<b>6.2</b>